

DEAL TEST SITE

1919 Acquired by Western Electric, this site consisted of 208 acres.

1925 Transferred to Bell Laboratories.

From a Bell Labs Bulletin dated January 22, 1953:

Others tracts were acquired in 1929. With the goal of extending telephone service to ships at sea, engineers at Deal set up, in 1920, an experimental transmitter and put speech and music on the air. Deal was, in fact, one of the first stations in the world to broadcast a musical program for entertainment. This experimental work led, in 1921, to successful test with coastwise ships, and the following year, apparatus was installed on the transatlantic steamer, AMERICA. Many other significant advances were born at Deal, including the development of the short wave transmitter for the first transatlantic radio-telephone service. During WWII, a part of the Laboratories' work on radar research and development was carried on at Deal.

1953 When the Labs' work being done at Deal was consolidated with the work at Holmdel, the property was disposed of by sale to George Fangmann and Walter Scott, Jersey City businessmen, in January.

The U.S. Government (US Army Engineers, District of New York as leasee with using agency US Army Electronics Command, Fort Monmouth) participation in the Deal Test Site began in September with a continual series of leases ranging from one to three years. The leases proved that they may be terminated by the government on thirty days written note to the owners. Subsequent to 1969, the leases stipulated that the government would pay \$58,000 annually for the site.

With the government as leasee, the Deal Test Area was prominent in the news in the late 1950s and 1960s because of its excellent facilities and performance in monitoring satellites and was, for a period, one of the prime tracking stations of the North Atlantic Missile Range. When Sputnik I was launched in October 1957, the Deal area was the first government installation the the United States to pick up and record the Russian signals. An elaborate monitoring facility was set up in time to monitor Sputnik II. Once again, Deal was the first American station to receive the signals.

Space achievements followed rapidly and all satellites, both American and Russian, were monitored and logged continuously by Deal personnel, as were all missiles launched from Cape Kennedy. The Deal Area was the communications center for COURIER, developed at Fort Monmouth and the first large capacity active communication satellite. It was also instrumental in the TIROS I and II weather satellites. Its space availabilities dropped off gradually as NASA and the Air Force set up their own monitoring and tracking facilities.

1973 In compliance with Army and DoD directives to effect economies by terminating unnecessary leases, ECOM terminated the lease with the owners effective June 30. The Deal facilities and personnel were moved to the Evans Area which was government-owned.

1977 "Deal Test Site may turn into recreational oasis." Ocean Township and the state of New Jersey joined to purchase the land as a nature preserve.

1982 "Deal Test Site becoming fossil." Problems getting money for the project.



Bell Laboratories

101 John F. Kennedy Parkway
Short Hills, New Jersey 07078
Phone (201) 564-2000

July 23, 1982

Mr. Kenneth J. Clifford, Archivist
Historical Office (DRSEL - HL)
Building 718
Fort Monmouth, New Jersey 07703

Dear Mr. Clifford:

Per our telephone conversation this morning, please find attached the article from the Bell Laboratories Record, "The Laboratories in Monmouth County" by P. B. Findley and the Information Bulletin dated January 22, 1953.

If I can be of further assistance to you, please do not hesitate to call.

Sincerely,

Norma H. McCormick

Enc.

Received 7/28/82
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DEPARTMENT OF THE ARMY

HEADQUARTERS US ARMY COMMUNICATIONS-ELECTRONICS COMMAND

AND FORT MONMOUTH

FORT MONMOUTH, NEW JERSEY 07703

Mrs. Norma H. McCormick
Bell Laboratories
101 John F. Kennedy Parkway
Short Hills, New Jersey 07078

Dear Mrs. McCormick:

Thank you so much for your letter of 23 July and the enclosures of article from Bell Laboratories Record and Information Bulletin. The articles were most interesting and did fill in the void as to the use of the Deal Test Site before the Army became involved.

After Bell Labs sold the property to the Jersey City businessmen in January (April) 1953, the U.S. Army Corps of Engineers, District of New York, as leasee, acquired the property for the U.S. Army Electronics Command at Fort Monmouth. The Army utilized the property on a year by year continual lease until 30 June 1973.

Fort Monmouth laboratories used the property for monitoring satellites, including the first Sputnik in October 1957. The Deal area became one of the prime tracking stations of the North Atlantic Missile Range. Deal figured prominently in the COURIER communication satellite and the TIROS I and II weather satellites. Its space activities dropped off gradually as NASA and the Air Force set up their own monitoring and tracking facilities.

For your information and retention, I am enclosing a copy of 'Archives Catalog of Sources, Volume I, History and Bibliography', published by this office in the Spring of 1980. We have other acquisitions since that time but I have not had a chance to update Volume I as yet.

If I can be of any help on any of your enquires or projects, do not hesitate to let me know. We have a great many sources to go to for help.

Thank you again and best wishes,

Kenneth J. Clifford
Archivist/Historian

(201) 532-1675
1101

Enclosure

issued by the • Publication Department, Bell Telephone Laboratories
• FOR MEMBERS OF THE LABORATORIES

Vol. 4, No. 3

January 22, 1953

LABORATORIES SELLS DEAL, N. J. PROPERTY

A sales contract disposing of the Laboratories' property at Deal, N. J. was signed last week. The land, about 208 acres, and several buildings have been bought by George Fangmann and Walter Scott, Jersey City businessmen. Under terms of the contract, the Laboratories may retain possession of the property, as a tenant, for one year. This arrangement is subject to termination by the Laboratories on 30 days notice. Deed to the property will be transferred on April 15, 1953.

The Laboratories' work being done at Deal will be consolidated with the program at Holmdel; this consolidation of effort is expected to result in substantial economies. The one-year lease has been arranged in order to allow time for necessary space re-arrangements at Holmdel.

Sale of Deal has been anticipated for some time, and during 1952 many members of the Laboratories located there have already moved to Holmdel or to Murray Hill.

Fox-Hurst Farm 53 Acres
Deal has been the site of many history-making events in radio and radio-telephony. The holdings there consist of three main tracts of land, the first of which was acquired by Western Electric in 1919 and transferred to the Laboratories when the latter was incorporated in 1925. The other tracts were acquired in 1929. With the goal of extending telephone service to ships at sea, engineers at Deal set up, in 1920, an experimental transmitter and put speech and music on the air. Deal was, in fact, one of the first stations in the world to broadcast a musical program for entertainment. This experimental work led, in 1921, to successful tests with coastwise ships, and the following year apparatus was installed on the transatlantic steamer, America. Many other significant advances were born at Deal, including the development of the short wave transmitter for the first transatlantic radio-telephone service. During World War II, a part of the Laboratories' work on radar research and development was carried on at Deal.

The Laboratories in Monmouth County

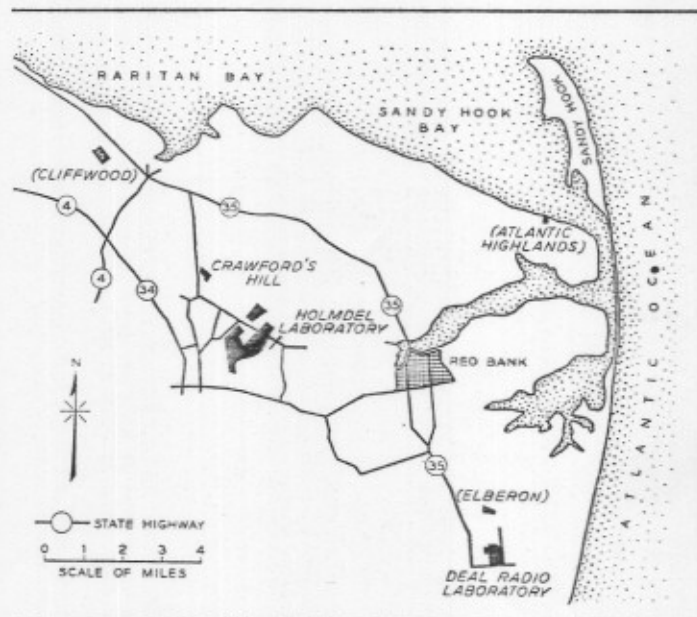
P. B. FINDLEY
Editor
Bell Laboratories Record

About thirty years ago, the time seemed ripe for the Bell System to begin development looking toward extension of telephone service to ships at sea. During World War I, which had just ended, the Laboratories—then the Engineering Department of the Western Electric Company—had developed successful two-way radio systems for submarines and for airplanes. On this foundation the new system was to be built by a team under the late H. W. Nichols.

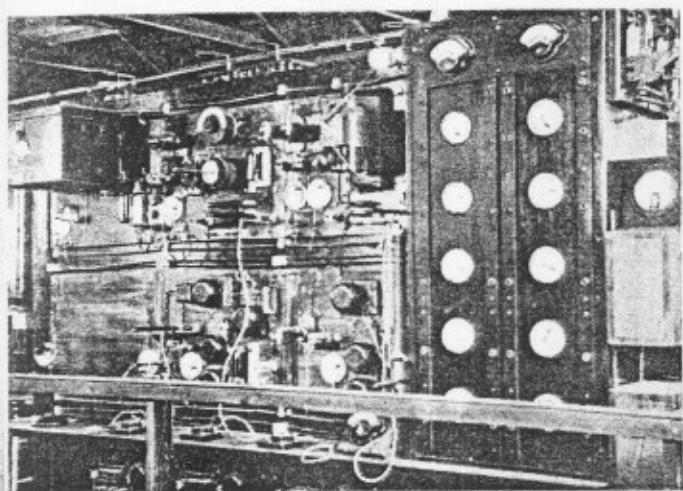
From New York's Lower Bay and the North Jersey Coast, the rolling country of Monmouth County sweeps inland. Here was to be found an appropriate site for the radio station. In the summer of 1919, representatives of Western and of the Department of Development and Research of A T & T surveyed the area between Perth Amboy, Long Branch and Lakewood. They recommended a location near Cliffwood, which was bought. So was established a foothold in Monmouth County from which were to proceed great advances in radio.

Work was begun promptly at Cliffwood by putting up a temporary building and starting work on the scale model of an antenna. In September, 1919, a site near Deal was bought, and three 165-foot towers were erected. By February 1920, an experimental transmitter was "on the air" with speech and music, and listeners were reporting on the signals received at distant points. A third plot, near Elberon, was rented and receiver

testing was started. Tests with coastwise ships were made successfully during 1921, and the following year apparatus was installed on the transatlantic steamer *America*. Test calls were made from Bell System telephones when the *America* was as much as 300 miles offshore. Then the post-war depression arrived and steamship lines showed no enthusiasm for telephone service, so the receiving station at Elberon was discontinued, and the Deal location was turned to other uses.



March 1950

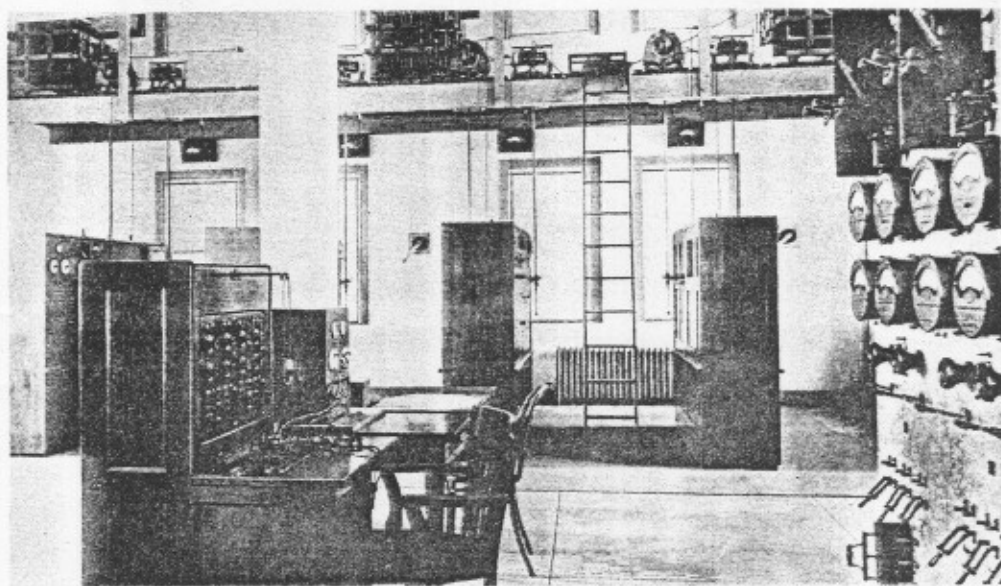


Development model of the first ship-to-shore radio transmitter in 1920. It was set up in a temporary building at Deal. Tests with coastwise ships were successfully made and, in 1922, apparatus was installed on the America and calls were made from Bell System telephones when the ship was as much as 300 miles offshore.

the development of sets for improved measurement of the strength of radio fields, particularly at those new "high" frequencies. Some of these sets gave the first clear picture of the effect of steel-frame buildings in cities on broadcast transmission and indicated the practicality of transatlantic radio.

Further improvements of receivers also appeared at Cliffwood. The automatic gain-control circuit which dates back to 1923, was the forerunner of similar circuits now in general usage and the same is true of the automatic frequency-control circuits which appeared a few years later in connection with short-wave work.

Meanwhile, a 20-kw amplifier operating at frequencies in the range from 2700 kc to 22000 kc, was evolved at Deal, to be followed shortly by another in which the power was pushed up to 80 kw. These are believed as a matter of history to be the first high-power amplifiers to be developed anywhere for use in this frequency range; they demonstrated the feasibility of stable amplification



Operator's control desk of the ship-to-shore transmitter of 1921.

At Cliffwood the development of receivers employing the double detection principle with amplification at intermediate frequencies culminated in the famous 4A radio receiver, which demonstrated the practicality and simplicity of the system which is now almost universally used in radio reception. Another early project was

under extreme conditions. The development of transmitters continues to be one of the important contributions which Deal makes.

Starting merely as an alternate to the long-wave London circuit during the difficult summer months, the original 20-kw transmitter was used from 1927 to 1929 to supply the first commercial short-wave radio

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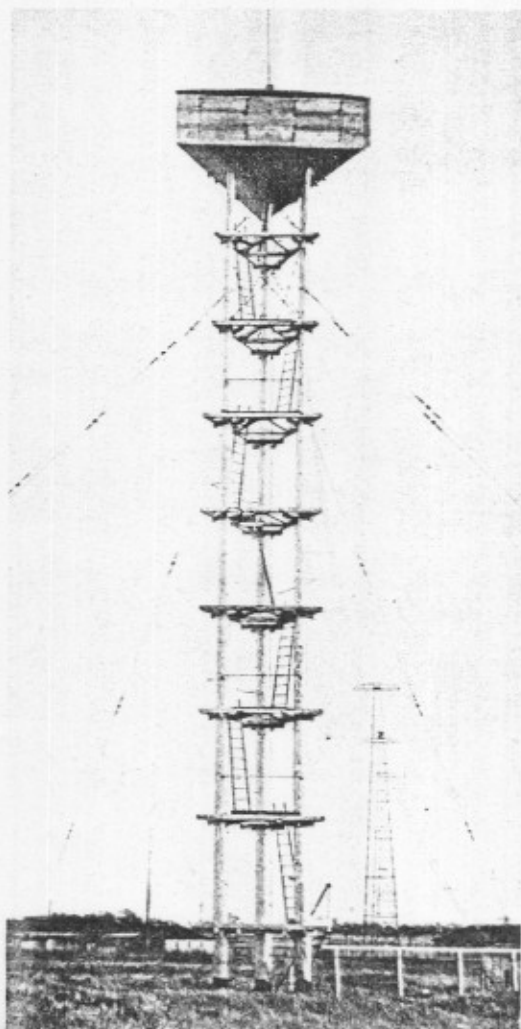


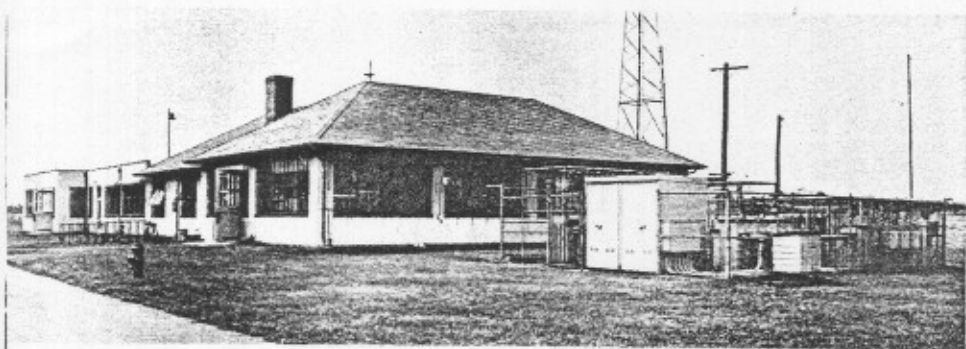
The main building at Deal, erected in 1921 to house the ship-to-shore transmitter. On the tall steel towers was hung a prototype of the original, or curtain, antenna used for a time at Lawrenceville.

telephone circuits between this country and England. Later, before the new station at Ocean Gate was equipped, it was also used to open the first telephone service to ships at sea. Thus for a while Deal became a commercial station staffed by operators from the Long Lines Department of A T & T. Finally, however, transmitters were installed at Lawrenceville and Ocean Gate which were patterned after the original 80-kw transmitter at Deal as were also those installed at Dixon, California, and at Buenos Aires.

In the years which followed, theory and experiment advanced side by side in the field of radio wave propagation. Extensive studies were made to map the frequency range to show what frequencies would best serve transmission to any distance at any time. On the geophysical side important contributions were made to the knowledge of the structure and behavior of the ionosphere, the reflecting region which makes long distance propagation possible. A theory pointing out the relation of the earth's magnetic field to radio wave propagation was developed. The effect of solar activity was studied both in regard to secular effects and in relation to the prediction of transmission conditions. The effect of meteors as contributors to atmospheric ionization was demonstrated by a crucial experiment. Contributions of great importance to the design of receiving systems and apparatus were made

Forerunner of the radio relay stations which are rising across the country, this unit was set up at Deal in 1936 for experiments in 180-cm radio transmission.



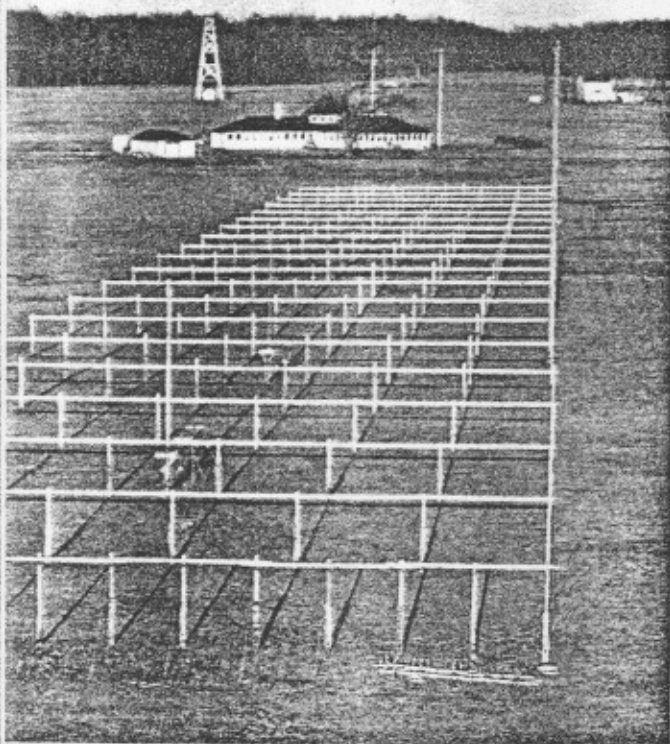


One of the more recent Deal buildings. It houses microwave and high-power development work. One of the original ship-to-shore towers is at the right.

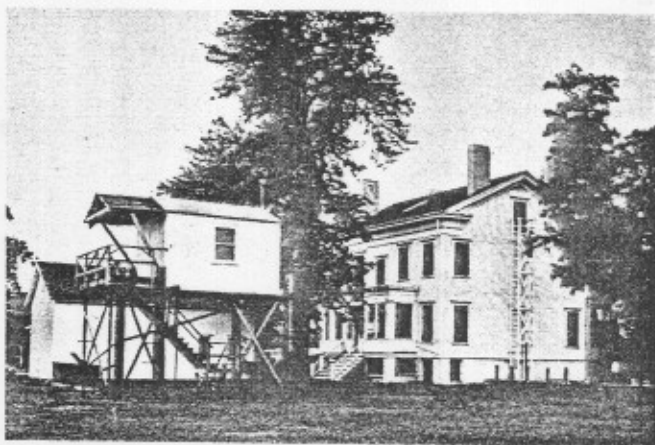
by studying minutely the properties of radio waves as received from long distances. Much was learned about the multiplicity of paths over which signals might travel with correspondingly different times of transit and different directions of arrival at the receiver. That fading of short-wave signals is largely due to variable interference between these wave components was early demonstrated, and the clear picture thus provided was of inestimable service in determining what to do about it. Representatives of the

Laboratories who had gone to Britain and South America for this purpose contributed to this program, and effective cooperation was given by foreign communications organizations which were vitally concerned.

Several successful types of antenna array were developed at Cliffwood and at Deal and installed at Lawrenceville and Netcong for use in commercial operation. First use of coaxial lines as the transmission system between antenna and receiver was made at Cliffwood, an antenna accessory which was



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Built just after the Civil war, the "Roberts House" at Holmdel is a fine example of American architecture. The house on pillars in the foreground dates only from World War II, when it was used for various radar antenna studies.

Taken in 1937 this picture shows a net of wires a few feet above the earth, used in studies of artificial grounds. Just behind it is the main Holmdel laboratory; in the distance is the caretaker's house.

Bell Laboratories Record

borrowed and given a major role in wire transmission.

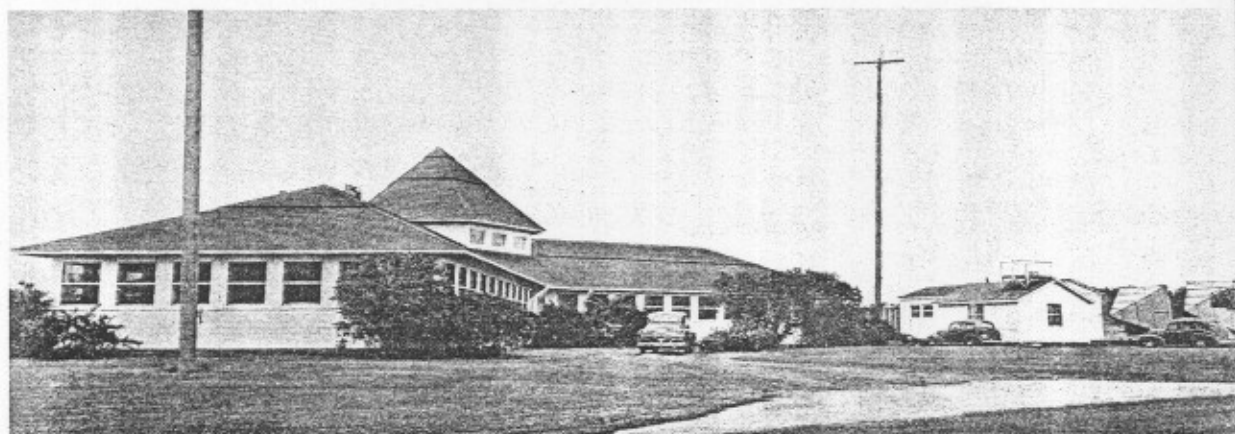
The temporary quarters at Cliffwood had never been more than a makeshift, and were becoming so crowded that in November, 1929, the Laboratories bought three farms a mile or so northeast of Holmdel. There were three houses on the property, one of which is still used as a laboratory. Another, "the Dutch house," was built in the early seventeenth hundreds and with its large fireplaces and old-fashioned kitchen is one of the architectural treasures from the history of Monmouth County. In addition, a one-story temporary building was soon erected for laboratories and offices, and a few small buildings were later added for special purposes. On this tract of land have germinated and flowered several of the important communications developments of recent years.

At Holmdel a strong emphasis has always been placed on antenna development. Among important projects which might be mentioned is the work on long-wire antennas for short waves which led to the "rhombic"

investigation at Holmdel of the influence of the ground on radio transmission and accordingly on the performance of radio antenna systems.

At Cliffwood, studies of the absolute sensitivity of radio receivers and its limitation by "thermal agitation" noise eventually led to the present "noise figure" rating of receivers in common use today. The investigation of noise and noise sources was continued at Holmdel where studies of the direction of arrival of short-wave interferences led unexpectedly to the discovery of a source outside the earth; in fact the culprit was found to be in the Milky Way itself. On this beginning has developed the new science of "radio astronomy," a field now being actively investigated by astronomers and physicists the world over.

Toward the end of the Twenties the radio group, realizing the number of additional channels which higher frequencies would open to their rapidly growing art, were really treading on the heels of their colleagues in Electronics. Eventually tubes



The main building at Holmdel has a central foyer from which radiate two wings housing laboratories and offices, and a third wing for shops and services.

antenna which is now almost universally used. Another started with extensive measurements of the angles of arrival of radio waves and finally led to the combination of several rhombics with phase-changers to form the versatile MUSA, a "multiple unit steerable antenna" which could be trained electrically in any desired direction, or in several simultaneously. Important to this antenna development program was the in-

vestigation at Holmdel of the influence of the ground on radio transmission and accordingly on the performance of radio antenna systems. At Cliffwood, studies of the absolute sensitivity of radio receivers and its limitation by "thermal agitation" noise eventually led to the present "noise figure" rating of receivers in common use today. The investigation of noise and noise sources was continued at Holmdel where studies of the direction of arrival of short-wave interferences led unexpectedly to the discovery of a source outside the earth; in fact the culprit was found to be in the Milky Way itself. On this beginning has developed the new science of "radio astronomy," a field now being actively investigated by astronomers and physicists the world over.



Stretching a quarter-mile from the Roberts House are Holmdel's first two wave-guides.

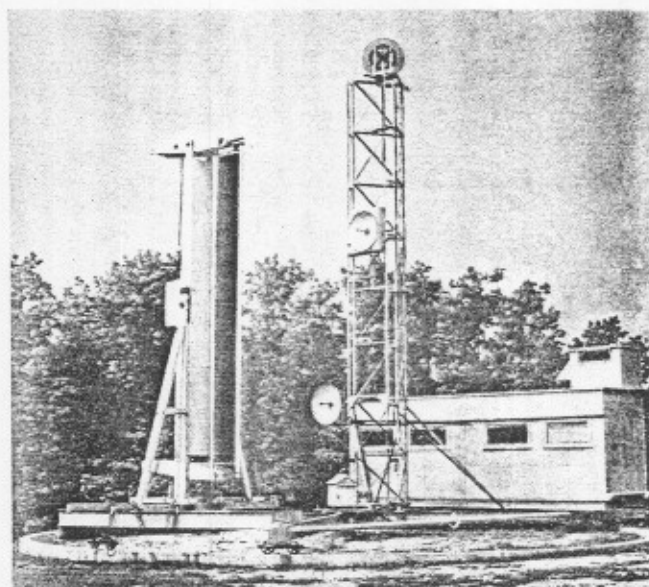
The use of ultra-short waves in mobile radio was naturally not neglected. It was now possible to build effective antennas, transmitters and receivers which could be mounted in automobiles. Some of the earliest mobile radio tests and field strength surveys were made by Deal engineers in and around Boston. In another project, an antenna and radio equipment mounted on a single pole made practicable an unattended radio station which occupied almost no real estate. After tests between Holmdel and Deal, a 75-mc channel was set up for service trial between Provincetown and Green Harbor, Mass. That system provided the only telephone contact after the 1938 hurricane.

Later a 12-channel unattended system was engineered for the gap between Cape Charles and Norfolk; the antennas and transmitters were developed at Deal. This employed envelope feedback to suppress cross-modulation, a method which had been developed for short-wave transmitters years before at Deal and which has since been widely used to reduce distortion in broadcast transmitters.

With continued pressure toward higher frequencies, one of the Holmdel engineers turned back to the crystal detectors of fifteen years earlier. By the end of the Thirties he was successful in using silicon and other materials to handle frequencies up to 2800 mc, and further development during the war made this point-contact device the best detector for radar.

In the early Thirties during an exploratory survey of the field of guided waves so much of interest was found that in 1934 a group was set up at Holmdel for a more intensive study of this field. They measured and experimented and invented, and when the war came their accumulated output became a veritable stock pile in the new field of radar. The new wave-guide means of transmission was found to be a "natural" for wavelengths of a few centimeters, with transformers, hybrids, phase shifters, filters, and so on corresponding to analogous devices in the older art of transmission.

Outbreak of the European War in 1939



Mounted on a turntable atop Crawford's Hill at Holmdel, this microwave set can be pointed at various objectives—some of them reflectors which allow the transmitting and receiving ends of the path to be operated in the same room.

found Holmdel at work on microwave radio repeater systems. In June of that year, at a demonstration for various officials of the Bell System, exhibits and lectures by Holmdel engineers showed that research models of the different components, such as wave-guides, oscillators, amplifiers, converters and antennas, required for microwave repeaters, were in an advanced stage of development. Microwave repeaters did not reach installation until 1947-48, but the techniques be-

came extremely valuable to the development of radar during the war.

No attempt will be made to cover in detail the work of the Monmouth Laboratories during the war, but a few of the high spots will be mentioned. In 1940 it was decided that except for some work on short-wave direction finders, Holmdel engineers would work on radar only. Things started humming and before a year had passed Holmdel had supplied complete microwave receivers and measuring equipment to the new government-sponsored Radiation Laboratories at the Massachusetts Institute of Technology and information on all of our techniques was freely given. Deal developed several radar transmitters and radar antennas, among the latter the Cutler antenna feed which by the end of the war had become almost universal in airborne radars.

Wartime needs prompted the purchase of a fourth home for our Monmouth County activities. This was a waterfront test station at Atlantic Highlands. On high ground overlooking the Lower Bay was erected a frame building with a long platform in front, on which were tested a score or more radars which were to leave the mark of their guns on our enemies. At the end of the war our radar work was concentrated elsewhere and the property was disposed of.*

One outstanding contribution from Holmdel was the polyrod antenna array for a shipborne radar. Its indications were so accurate that at one time it was used on all large ships to direct the fire of the main batteries. An-

other Holmdel development, the so-called "Rocking Horse" antenna, was used in another main-battery radar about which the following statement was made by Rear Admiral G. F. Hussey, Chief of the Bureau of Ordnance:

"While Fleet experience with this radar equipment is limited to only a few ships, reports from these ships indicate that it is considered the best radar equipment yet installed on shipboard."

In citing examples, however, the historian is embarrassed by the number from which he must choose and by the impossibility of doing individual justice.

Nineteen-forty-five brought reorientation toward Bell System's peacetime needs. Research was resumed on microwave electronics, the development of new short-wave transmitters, and a wide variety of new and in some cases spectacular developments.

The radio research group has made lasting contributions† in the areas of long waves, broadcast waves, short waves and finally centimeter waves. The centimeter waves, now well established on radio relay systems, are being tentatively joined by millimeter waves and even by long optical waves in the service of communication. The outcome obviously belongs to the future, but our Monmouth County laboratories will undoubtedly meet these new challenges as they have those of the past.

*RECORD, May, 1946, page 203.

†Embodied in more than 200 published papers as well as countless memoranda.



March 1950

THE AUTHOR: Editor of the RECORD since its inception, P. B. FINDLEY's name has seldom appeared in its pages as an author. Of this article he says, "It started out as a description of Monmouth County and of the Laboratories' work there. Eventually the latter part grew so big that it became the whole story. The article unites the contributions of a good many people, of whom K. G. Jansky, H. T. Friis and J. C. Schelleng should be mentioned particularly."

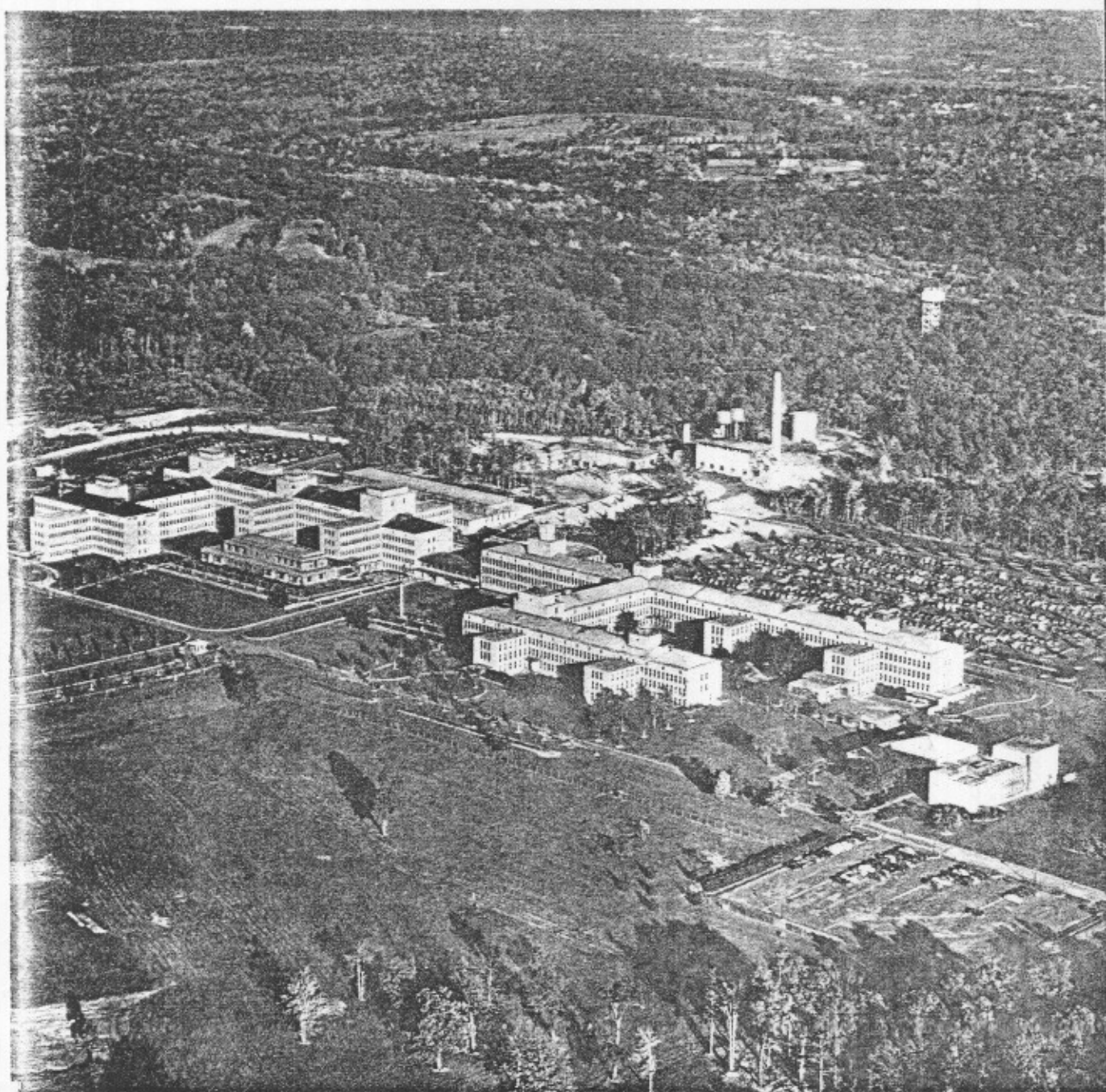
With degrees from Princeton in physics and engineering, the author went to work for Bell of Pennsylvania in Pittsburgh. While there he wrote an article for "The Telephone News." Since then he has been a literary man, observing and telling about the science and engineering of others.

BELL LABORATORIES RECORD

MARCH 1950

• VOLUME XXVIII

• NUMBER 3



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English did not say what
steps he would take to gain
council support for larger re-
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NOV 18 1979



Register photo by Don Lardi

TOWERING — One of the satellite tracking towers on the Deal Test Site dwarfs some of the abandoned buildings left over from when the site actually was a test site. Under a proposal the buildings would be renovated and the 208-acre site turned into a municipal park.

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in there, there's no com-
munication and there are no
people in there," Mr. Fehren-
bach said.

But Ms. Grove said that
with the jogging path open
there would be people in the
area. "If we wait a year for
the funding to come through, it
will take another year for the
project to be completed and
we will have lost two summers
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Deal Test Site may turn

By ROBIN GOLDSTEIN

OCEAN TOWNSHIP — Right in the middle of Ocean Township lies a 208-acre tract of virtually untouched land, dotted incongruously with spindly radio towers; a park of sorts which goes by the unlikely name of Deal Test Site.

For years before the township and the state joined to purchase the land as a nature preserve in 1974, the scenic tract bustled with technological activity; pioneering radio experiments, satellite tracking, pre-space program mapping of the moon's surface.

The departure of technicians, however, left the township with an amazingly unspoiled oasis, while all around it trees and open space gave way to houses and apartments.

Now, a \$2.3 million plan to "open up" the Deal Test Site for a gamut of activities is being looked on approvingly by the state Environmental Protection Agency (EPA).

An application has been made for state Green Acres funding, which would pay for half of the site's development, Albert Kerecman, a member of the Deal Test Site Advisory Board, explained.

The other half of the tab would be picked up by the township.

EPA officials appeared to be enthusiastic about the site master plan drawn up by the advisory board, Mr. Kerecman said, and they are expected to take a first-hand look at the site later this month.

Deal Test Site today is hardly an unused tract of land; its varied foliage and fauna are viewed on regularly scheduled nature walks, during bird counts and tree digs, and by a number of ecologically-minded groups.

The site's use by one group — the township's school system — could threaten state

funding for the master plan improvements, Mr. Kerecman said.

About three years ago, the school moved its administrative offices from the Oakhurst School to an existing building on the test site.

It has been a comfortable arrangement for the township, but it will have to stop if Green Acres funding for the site is to be approved, EPA officials warned the site advisory board.

Projects and groups not directly related to outdoor recreation are disallowed under Green Acres, Mr. Kerecman explained.

If, as site proponents hope, the township is given a grant to complete the master plan in two years, the school administration must promise to find themselves a new home off the site before the time is up.

Mr. Kerecman admitted that this problem is one that school and township officials had been aware of.

Whether the school administration will have someplace to move to, and if they'll even be willing to move, has not yet been discussed, he added.

"When you've had a chance to work at the test site and gotten used to how beautiful it is, you're not going to be happy about leaving it," Mr. Kerecman noted.

Deal Test Site is an unusual, and somewhat complicated project by Green Acres standards because there are so many existing buildings contained in it, Mr. Kerecman said.

The master plan calls for renovation of the buildings, for use as supervisory, maintenance, and community activity space.

The six towers and the former satellite tracking pedestal will be retained both for their historic value and for site security, to be incorporated in a closed circuit television system which town-



DEAL TEST SITE — The 208-acre Deal Test Site, smack in the center of bustling Ocean Township, seems serenely separate from burgeoning commercial development all around it. Radio towers, left over from the site's days as center of radio and satellite experimentation, provide strange contrast

ship police can monitor.

And, if Ft. Monmouth will donate a cupola for the pedestal, the state will donate a telescope so that the structure can be used for astronomical studies, Mr. Kerecman said.

The creation of two retention basin "lakes" off of Poplar Brook will serve a dual purpose of recreation and sorely-needed drainage improvement for the township. The two 10-acre ponds in the eastern portion of the tract will be used for recreation and will be surrounded by picnic areas and landscaped open space. The retention basins are included in the township's master drainage plan,

for which it also hopes to receive Green Acres funding.

The northeastern section of the site will be set aside for horticultural activities, including community garden projects. The mulch and woodchip recycling programs already underway at the site will be continued in this area.

The four-year old Summer Showcase series, which each year presents a play in a natural amphitheatre on the site, will also be continued, and facilities for dressing rooms and drama classes will also be provided in the existing buildings.

Trails for bikers, walkers, and runners will be constructed — but no mo-peds or trail



to untouched natural site features like Poplar Brook. The township is hoping for Green Acres funding for a \$2 million master plan to expand the site's use as a recreational, relaxational and cultural preserve.

bikes are allowed.

In addition to the site's more recent technological history, it is rich in natural history, from the marl forma-

tions created when the area was part of the ocean floor, to Indian artifacts left along the Leni-Lenape tribe's Beach-plum Trail. Research into the

Only one new structure will have to be erected, for mundane but necessary bathroom facilities.

The master plan improvements are imperative so that area residents will be able to fully enjoy the site, which now remains closed except for specific activities, Mr. Kerecman said.

Green Acres and the township split the \$2 million pur-

on the north, Deal Road to the south, and private property to the west.

"Deal Test Site is not really open now, in my opinion," Mr. Kerecman noted. "It's not used anywhere near as much as it could be. We want to open it up to people from all over, not just Ocean Township, for recreation and relaxation, as well as for the study of nature."

Copy of Draft Letter

28 July 1982

Subject: Deal Test Site, Ocean Township, Monmouth County, New Jersey

1. The Deal Test Site consists of an area of 208 acres. The land was acquired by Western Electric in 1919 and transferred to the Bell Laboratories when the latter was incorporated in 1925. Bell Labs Bulletin of January 22, 1953, notes the following about Deal:

Deal has been the site of many history-making events in radio and radio-telephony. The holdings there consist of three main tracts of land, the first of which was acquired by Western Electric in 1919 and transferred to the Laboratories when the latter was incorporated in 1925. The other tracts were acquired in 1929. The with goal of extending telephone service to ships at sea, engineers at Deal set up, in 1920, an experimental transmitter and put speech and music on the air. Deal was, in fact, one of the first stations in the world to broadcast a musical program for entertainment. This experimental work lead, in 1921, to successful tests with coastwise ships, and the following year apparatus was installed on the tran-atlantic stea, AMERICA. Many other significant advances were born at Deal, including the development of the short wave transmitter for the first transatlantic radio-telephone service. During World War II, a part of the Laboratories' work on radar research and development was carried on at Deal.

The Laboratories' work being done at Deal was consolidated with the work at Holmdel with Bell Labs disposing of the property by sale to George Fangmann and Walter Scott, Jersey City businessmen in January 1953.

2. The U.S. Government, (U.S. Army Engineers, District of New York as leasee with using agency, U.S. Army Electronics Command, Fort Monmouth) participation in the Deal Test Site, appears to have begun in September 1953 with a continual series of leases ranging from one year to three years. The leases provided that they may be terminated by the Government on 30 days written note to the owners. The latest series of leases, subsequent to 1969, stipulated that the Government would pay \$58,000 annually for the site.

3. With the Government as leasee, the Deal Test Area was prominent in the news in the late 1950s and 1960s because of its excellent facilities and performance in monitoring satellites, and was, for a period, one of the prime tracking stations of the North Atlantic Missile Range. When Sputnik I was launched in October of 1957, the Deal area was the first government installation in the United States to pick up and record the Russian signals. An elaborate monitoring facility was set up in time to monitor Sputnik II. Once again Deal was the first American station to receive the signals. Space achievements followed rapidly and all satellites, both American and Russian, were monitored and logged continuously by Deal personnel, as were all missiles launched from Cap Kennedy. The Deal Area was the communications center for COURIER, developed at Fort Monmouth and the first large capacity active communication satellite. It was also instrumental in the TIROS I and II weather satellites. Its space activities dropped off gradually as NASA and the Air Force set up their own monitoring and tracking facilities, but Deal has its own important place in the history of space exploration.

4. In a report made by ECOM in October 1972 describing 'excess leased real estate', the report pertaining to the Deal Test Site noted the following:

The site contains 9 buildings with a total gross area of 20,382 square feet of space and five steel towers, each approximately 185 feet in height. There are 6 additional miscellaneous type buildings comprising 4,714 square feet of space, utilized for storage and a radome approximately 50 feet in diameter. There are underground power cables leading from the buildings into the field and a copper grid network throughout the area for grounding of antennas. A cyclone fence is situated around the courtyard surrounding all the buildings. There are also a number of miscellaneous wood poles located on the property.

This area has been utilized by laboratory elements of ECOM in the research and development of radio receiving equipment systems and other electronic communications projects requiring a "quiet area."

The real estate included in this report is considered safe for non-military use and is not contaminated with explosives or other toxic material.

5. In compliance with Army and DOD directives to effect economies by terminating unnecessary leases, ECOM terminated the lease with the owners, effective 30 June 1973. The facilities and personnel at Deal were moved to the Evans government owned area.

6. There are several photographs of some of the buildings and radio towers, that are located at the Deal site. Copies of the photographs will take another two weeks and they will be sent to you under separate cover.

W.B. STRONG, JR.
Command Historian

11 OCT 1972

SUBJECT: Report of Excess Leased Real Estate, Fort Monmouth,
New Jersey

Amell - IS - FC

Commanding General
US Army Materiel Command
Attn: AMCIS-MR
Washington, DC 20315

1. Reference is made to Lease No DACA 51-5-70-9, executed on 28 August 1972, for the use of property by the US Army Electronics Command (ECOM) at the Deal Test Site, Ocean Township, Monmouth County, New Jersey.
2. The aforementioned area, consisting of approximately 208 acres, is no longer required to meet the foreseeable needs of this command. ECOM activities presently utilizing this property are in the process of relocating onto Government-owned real estate. This action is scheduled to be completed prior to 30 June 1973.
3. In accordance with the requirements of paragraph 15b, AR 405-90, the following information required to excess this property for disposal, through lease termination, is furnished:
 - a. The Deal Test Site is located in Ocean Township, Monmouth County, New Jersey, approximately 8 miles from the Main Post. The location, acreage and identification of the property which delineates the real estate tract boundaries are shown on Inclosure 1.
 - b. The site contains 9 buildings with a total gross area of 20,382 square feet of space and five steel towers, each approximately 185 feet in height. There are 6 additional miscellaneous type buildings comprising 4,714 square feet of space, utilized for storage and a radome approximately 50 feet in diameter. There are underground power

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required for military purposes for an additional 10 years. The
the Attorney General of the United States to file a proper notice of this

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cables leading from the buildings into the field and a copper grid network throughout the area for grounding of antennas. A cyclone fence is situated around the courtyard surrounding all the buildings. There are also a number of miscellaneous wood poles located on the property.

c. This area has been utilized by laboratory elements of ECOM in the research and development of radio receiving equipment systems and other electronic communications projects requiring a "quiet area". The equipment and personnel associated with these projects will be relocated onto Government-owned real estate.

d. In accordance with provisions of Executive Order 11508, a physical survey of Fort Monmouth, New Jersey, was made in June 1972 by Department of Defense. This report of excess for disposal action is in compliance with the findings and conclusions of the Installation Survey Report prepared by the Department of Defense Survey Team.

e. The 208 acre tract being reported is held under lease to the U.S. Government.

f. The lease provides that it may be terminated by the Government on 30 days written notice to the lessor, to take effect on the 30th day of June during the term of the instrument and for restoration upon surrender of the property. This property will be available for termination of the lease on 30 June 1973.

g. There are no contractual commitments affecting disposition.

h. No auxiliary facilities are located at the Deal Test Site.

i. No commitments have been made to other agencies, military departments or Federal agencies which would affect disposition of this property.

j. The real estate included in this report is considered safe for non-military use and is not contaminated with explosives or other toxic material.

Deal Test Area Facilities to Move to Evans Area

FORT MONMOUTH — In compliance with Army and Defense Department directives to effect economies by terminating unnecessary leases, the Army Electronics Command plans to move activities and equipment from the Deal Test Area at Deal and Whalepond Roads, Ocean Twp., before next July 1.

The facilities now at the Deal Area will be set up in the Evans Area in Wall Township and on other available government-owned property.

The 208 acres at Deal are leased from Walter Scott (c-o John H. Jobes of Jersey City) at an annual cost of \$58,000. The lease runs to June 30, 1974, but ECOM plans to exercise an option to terminate at the end of the fiscal year, June 30, 1973.

The Deal Test Area was prominent in the news in the late 50s and early 60s because of its excellent facilities and performance in monitoring satellites, and was, for a period, one of the prime tracking stations of the North Atlantic Missile Range.

When Sputnik I was launched in Oct. of 1957 the Deal Area was the first government installation in the United States to pick up and record the Russian signals. An elaborate monitoring facility was set up in time to monitor Sputnik II. Once again Deal was the first American station to receive the signals.

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The Deal Area was the communications center for Courier, developed at Fort Monmouth and the first large capacity active communications satellite. It was also instrumental in the TIROS I and II efforts.

Its space activities dropped off gradually as NASA and the Air Force set up their own monitoring and tracking facilities, but Deal has its own important place in the history of space exploration.



LEGION OF MERIT — Col. Wilmer M. Beam (right) Army Communications Systems Agency, receives the Legion of Merit from Col. Jack N. Col, deputy commandant of the Army Signal Center and School, at last week's Awards and Retirement Ceremony. Col. Beam is retiring from the Army.

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Army Contributions

The army has made many contributions to the field of medicine. In fact, the first book on the physiology of digestion was written by an army surgeon. For several years William Beaumont observed a man who had been accidentally shot in the stomach. Through his observations, he learned of previously unknown digestive processes. William Beaumont General Hospital in El Paso, Texas, is named in the surgeon's honor.



ALL TOGETHER, NOW! — Fund for County Area Combined Federal Camp O'Grady's, Eatontown, after the kick-off September 28. The fund will run County United Fund, National Health American Red Cross. These organizations "Give-Thru Payroll Deduction" is on installations participating in CFC-73.

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But God has not left us to follow the path to Him by
footprints. He has revealed Himself to us through the pages
of His written Word. The book of nature may tell us that
there is a God, but it is the Bible that tells us who He is and
what He has done and does for us.

The footprints of the setting and the rising sun may tell us
that God is. But only the nailprints in the hands of our
Redeemer can tell us that God is - Love.

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END OF AN ERA - For the last time, the flag is lowered at
the Deal Test Site in Ocean Township. Ordered closed for
economical reasons by the Army, its operations are now part
of other government operations. The test site was, in the late
50's and 60's, noted for monitoring satellite and tracking
missiles. The flag ceremony is performed by George R. Diak
of the Army Electronics Command and Patrolman Robert
Tiedeman.

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